Ares Vehicle Integration Office

Ares I-X Flight Evaluation Data Presented: Over the past week presentations were made to two management forums regarding the technical accomplishments of the Ares I-X flight evaluation activities. The technical briefings by Mr. Lawrence Huebner and Ms. Wendy Cruit of Marshall Space Flight Center occurred on January 28 and February 2.The first briefing addressed the Ares Projects and Engineering Management at Marshall and the second briefing addressed the Constellation Control Board and members of the Johnson Space Center engineering and flight operations staff. The two-hour summary briefing was generated from the three-day Flight Evaluation Task Review which occurred last fall and is a summary of the recently completed report, Final Flight Evaluation Report for Ares I Use of Ares I-X Data (APO-1041), that formally documents this activity.

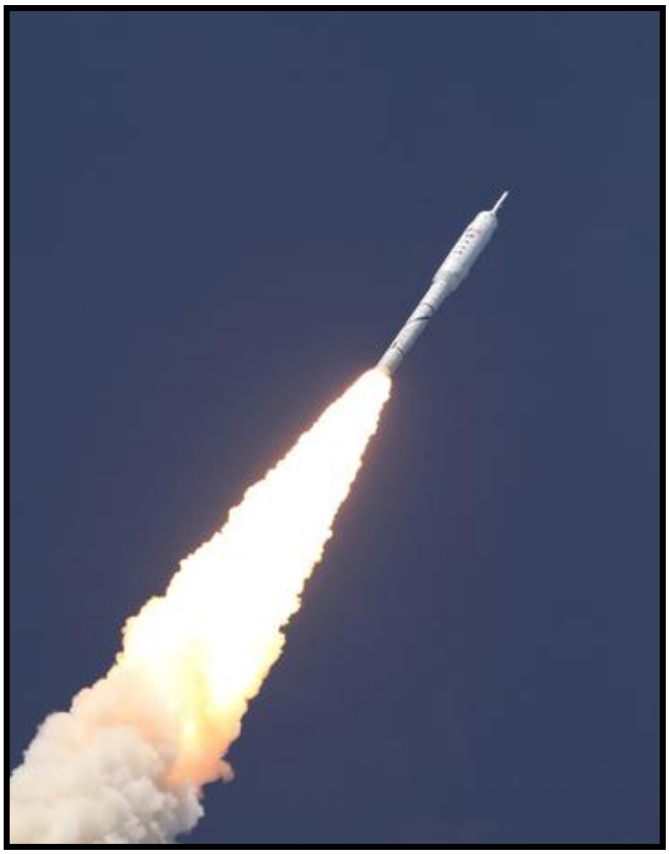

Figure 1: Ares I-X Launched on October 29, 2009

Flight and Integrated Test Office

Ares I Scale Model Acoustics Test (ASMAT): The second set of tests in a series of acoustics tests began in January 2011 at test stand 116 of MSFC. The "Elevation Series" of tests will simulate the acoustic environment produced by the Ares I First Stage at liftoff. The scaled vehicle model was moved to a fixed elevation and held in place for the duration of the firing event to simulate the acoustic environment at that level. The vehicle model was held at levels of 2.5-foot and 5.0-foot, representing 50-foot and 100-foot full-scale. Initial test results, from both tests, indicate that the overall noise levels measured on the vehicle were within predicted ranges. There was some damage to the test article and instrumentation, as expected, but it was minimal and replacement parts were installed to continue the test campaign. The remaining three tests in the "Elevation Series" will be performed in February, as weather permits, with the third test of the series simulating a full-scale elevation of 150-foot.

Figure 1: ASMAT Elevation 50-foot Test

Figure 2: ASMAT Elevation 100-foot Test

Ares Upper Stage

Avionics & Software Subsystem: Quallion LLC, a subcontractor of the Boeing Company, has successfully completed functional testing and delivery of three lithium-ion (li-ion) battery development test units (DTUs) to the Glenn Research Center (GRC). The Boeing Company anticipates delivery of eight additional battery DTUs to the Marshall Space Flight Center in FY11 for further evaluation and testing. The Upper Stage flight unit batteries will be used to power the Upper Stage Avionics and various other hardware on the Ares I vehicle.

Li-ion batteries are rechargeable batteries currently used in portable electronic applications. They are growing in popularity for military, electric vehicle, and now aerospace applications. The Ares I Upper Stage Element is working towards qualification of li-ion technology for manned space flight.

Figure 4: Ares I Lithium-ion Battery Development Test Units

The Ares Projects look forward to

the launch of STS-133, Space Shuttle Discovery, planned for

the end of February, 2011.